

REMARKS

Applicant respectfully requests examination of this application.

Respectfully submitted,

CARLSON, GASKEY & OLDS

By: 

Anthony P. Cho

Registration No. 47,209

400 W. Maple Rd., Ste. 350

Birmingham, MI 48009

(248) 988-8360

Dated: December 31, 2001

APPENDIX 1

“VERSION WITH MARKINGS TO SHOW CHANGES MADE
TO THE SPECIFICATIONS”

Page 1, please replace the second full paragraph with:

The present invention is particularly applicable to latches used on vehicle doors such as car passenger doors or car [boot] trunk doors.

Page 1, please replace the third full paragraph with:

Vehicle door latches are known which are released using a power actuator. Typically the door latch would have a latch bolt retained in position by a pawl and the actuator would act on a release lever connected to the pawl or would act directly on the pawl to release the latch. After the actuator's power stroke, the actuator must return to its initial state in one of three traditional methods: [-]

Page 1, please replace the fourth full paragraph with:

a) Reverse [energising] energizing of the motor such that the motor is spun in its opposite direction e.g.. reversing the polarity on an electric motor,

Page 2, please replace the third full paragraph with:

However a problem with such an arrangement is that under some conditions the seal force which tends to open the door can be insufficient to push the latch bolt past the secondary latched position resulting in a door that only opens to the secondary latched position. Under such circumstances the latch has to be unlatched again from the secondary latched position either manually by pulling on a door handle again or in the case of an actuator driven latch by operating the actuator for a second time and pulling the door open. Insufficient seal load could be caused by a door frozen into a closed position, poor fit/misalignment of the door, heavy vertically opening rear [boot] trunk lids.

Page 3, please replace the third full paragraph with:

According to a further aspect of the present invention there is provided latch mechanism including a power actuator, the power actuator having a motor and a drive train, the drive train having at least one abutment for engagement with a release means of the latch mechanism, [energisation] energization of the motor causing the abutment to move the release means from a first engaged position to a second released position to release the latch, in which a retention means (58) is capable of retaining the release means in its second released position.

Page 3, please replace the fourth full paragraph with:

According to a further aspect of the present invention there is provided a latch mechanism including a power actuator, the power actuator having a motor and a drive train, the drive train having the plurality of abutments for engagement with a release arrangement of the latch mechanism, [energisation] energization of the motor causing one of the plurality of abutments to move the release arrangement from a first engaged position to second released position to release the latch, resulting in another of the plurality of abutments co-operating with the release arrangement to provide a drive train stop.

Page 4, please replace the first full paragraph with:

The invention will now be described, by way of example only, with reference to the drawings in which: [-]

Page 7, please replace the first full paragraph with:

The motor is [energised] energized for say 800 milliseconds, causing the rotor 24 to rotate anticlockwise in the direction of arrow A of the figure 2 resulting in post 30A engaging and moving first arm 52 to the position shown in figure 2. Clearly this movement of first arm 52 causing the release lever 50 and the first pawl 44 to both rotate about pivot 46 in a clockwise direction as shown by arrows B and C, thus disengaging pawl 48 from primary latching abutment 36.

Page 7, please replace the third full paragraph with:

Typically the time taken to move from the position as shown in figure 1 to the position as shown figure 2 might be 500 milliseconds, thus the motor would be stalled for the last 300 milliseconds of the 800 millisecond motor [energisation] energization as a result of post 30C abutting the end of second arm 54.

Page 7, please replace the fourth full paragraph with:

Once the latch assembly has achieved the position as shown in figure 2 the latch claw is free to rotate in a clockwise direction as shown by arrow E of figure 3 thus releasing the striker from the mouth 27 and allowing the door, or [boot] trunk lid, etc. to open.

Page 9, please replace the second full paragraph with:

Subsequent [energising] energizing of the motor 18 following closing of the latch as shown in figure 4 will unlatch the door in a similar sequence as described above, but note that post 30C (as opposed to post 30A as described above) is now positioned to act on first arm 52 to open the latch. In this case since there are three posts 30A, 30B and 30C, a single [energising] energizing operation of motor 18 results in rotor 24 only rotating through 120 degrees.

Page 10, please replace the fourth full paragraph with:

Operation of the latch assembly 110 is as follows: [-]

APPENDIX 2**“VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE CLAIMS”**

Please replace claim 1 as follows:

1. (Amended) A latch mechanism including;
a latch bolt moveable between a primary latched position and an open position,
a first pawl moveable between a first engaged position, where [it] the first pawl secures the latch bolt in at least its primary latched position and a second released position, where [it] the first pawl releases the latch bolt from at least its first primary latched position,
release means moveable between a first engaged position, where [it] the release means allows the first pawl to achieve its first engaged position and a second released position, where [it] the release means retains the first pawl in its second released position, and
a second pawl moveable between a first engaged position, where [it] the second pawl is capable of retaining the release means in its second released position, and a second released position, where [it] the second pawl releases the release means from its second released position,
such that the latch mechanism can be latched and unlatched.

Please replace claim 4 as follows:

4. (Amended) A latch mechanism as defined in [any preceding] claim 1 in which the latch bolt additionally has a secondary latched position intermediate the primary latch position and the open position.

Please replace claim 5 as follows:

5. (Amended) A latch mechanism as defined in [any preceding] claim 1 in which a trip abutment on the latch bolt is capable of moving the second pawl from its first engaged position to its second released position allowing the latch mechanism to latch.

Please replace claim 7 as follows:

7. (Amended) A latch mechanism as defined in claim 5 [or 6] in which the trip abutment does not affect retention of the release means in its second released position by the second pawl during movement of the latch bolt from its primary or secondary latched position to its open position.

Please replace claim 8 as follows:

8. (Amended) A latch mechanism as defined in claim 5 [or 6 or 7] in which the trip abutment moves the second pawl by engagement with a third pawl.

Please replace claim 10 as follows:

10. (Amended) A latch mechanism as defined in claim 8 [or 9] in which the third pawl is mounted on the second pawl.

Please replace claim 11 as follows:

11. (Amended) A latch mechanism as defined in claim 8 [or 9] in which the third pawl is mounted on a chassis of the latch assembly.

Please replace claim 12 as follows:

12. (Amended) A latch mechanism as defined in [any preceding] claim 1 in which a first arm of the release means is engaged to move the release means from its first engaged position to its second released position.

Please replace claim 13 as follows:

13. (Amended) A latch mechanism as defined in [any preceding] claim 1 in which an arm (56) of the release means is engaged by the second pawl to retain the release means in its second released position.

Please replace claim 14 as follows:

14. (Amended) A latch mechanism as defined in [any preceding] claim 1 including a power actuator having a motor and a drive train.

Please replace claim 16 as follows:

16. (Amended) A latch mechanism as defined in claim 14 [or 15] in which the drive train only operates in one direction.

Please replace claim 17 as follows:

17. (Amended) A latch mechanism as defined in [any one of] claim[s] 14 [to 16] in which the drive train includes a first abutment operable to move the release means from its first engaged position to its second released position.

Please replace claim 18 as follows:

18. (Amended) A latch mechanism as defined in claim 17 [when dependent upon claim 12] in which the first abutment of the drive train engages the first arm of the release means.

Please replace claim 19 as follows:

19. (Amended) A latch mechanism as defined in claim[s] 14 [to 18] in which the drive train includes a second abutment which co-operates with the release means to provide a drive train stop.

Please replace claim 21 as follows:

21. (Amended) A latch mechanism as defined in claim 19 [or 20] when dependent upon claim 17 in which the first abutment is capable of acting as the second abutment.

Please replace claim 22 as follows:

22. (Amended) A latch mechanism including a power actuator, the power actuator having a motor and a drive train, the drive train having at least one abutment for engagement with a release means of the latch mechanism, [energisation] energization of the motor causing the abutment to move the release means from a first engaged position to a second released position to release the latch, in which a retention means (58) is capable of retaining the release means in its second released position.

Please replace claim 23 as follows:

23. (Amended) A latch mechanism including a power actuator, the power actuator having a motor and a drive train, the drive train having a plurality of abutments for engagement with a release arrangement of the latch mechanism, [energisation] energization of the motor causing one of the plurality of abutments to move the release arrangement from a first engaged position to second released position to release the latch, resulting in another of the plurality of abutments co-operating with the release arrangement to provide a drive train stop.

Please replace claim 24 as follows:

24. (Amended) A latch mechanism as defined in Claim 23 in which the latch mechanism includes a latch bolt moveable between a primary latch position and an open position, and the release arrangement includes a first pawl moveable between a first engaged position where [it] the first pawl secures the latch bolt in at least its primary latch position and a second release position, where [is] the first pawl releases the latch bolt from at least its first primary latch position, the release arrangement further including release means moveable between the first engaged position, where [it] the release means allows the first pawl to achieves its first engaged position and a second release position where [it] the release means retains the first pawl in its second release position.

Please replace claim 27 as follows:

27. (Amended) A latch mechanism as defined in Claim[s] 23 [to 26] in which the plurality of abutments includes a first set of abutments to move the release arrangement from the first engaged position to the second release position and a second set of abutments for co-operation with the release arrangement to provide the drive train stop.

Please replace claim 28 as follows:

28. (Amended) A latch mechanism as defined in Claim 27 [when dependent upon Claim 24] in which the first set of abutments acts on the release means and the second set of abutments act on the pawl.